

Appl. No. 09/913,871
Atty. Docket No. 7440
Amdt. dated January 13, 2004
Reply to Office Action of November 13, 2003
Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

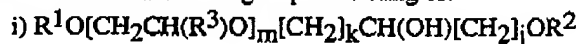
Listing of Claims:

1-13 canceled

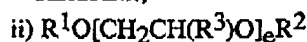
14. (currently amended) An automatic dishwashing detergent composition comprising:

- (a) from about 5% to about 90% by weight of the composition of a builder ;
- (b) from about 0.1% to about 15%, by weight of the composition of an oxide surfactant, said oxide surfactant being selected from the group consisting of amine oxides, phosphine oxides, sulfoxides, and mixtures thereof;
- (c) from about 0.1% to about 15% by weight of the composition of a low foaming nonionic surfactant wherein said low foaming nonionic surfactant has an interfacial tension of less than 8 dyne/cm having the formula $R^1(EO)_a(PO)_b(BO)_c$ wherein R^1 is a linear or branched C_6 to C_{20} alkyl; a is from about 2 to about 30; b is from 0 to about 30; c is from about 1 to about 10; and

(d) from about 0.1% to about 15% by weight of the composition of a co-surfactant having the formula selected from the group consisting of:



wherein R^1 and R^2 are linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radicals having from 1 to 30 carbon atoms; R^3 is H, or a linear aliphatic hydrocarbon radical having from 1 to 4 carbon atoms; m is an integer having an average value from 1 to 40; wherein when m is 2 or greater, R^3 may be the same or different and k and j are integers having an average value of from 1 to 12; further wherein when m is 15 or greater and R^3 is H and methyl, at least four of R^3 are methyl; further wherein when m is 15 or greater and R^3 includes H and from 1 to 3 methyl groups, then at least one R^3 is ethyl, propyl or butyl; further wherein R^2 can optionally be alkoxylated, wherein said alkoxy is selected from ethoxy, propoxy, butoxy, and mixtures thereof; wherein further, said surfactant has less than 30% of dimers and trimers of said nonionic surfactant;



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wherein R^1 is a linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radicals having from 1 to 30 carbon atoms; R^2 is a linear or branched, saturated or ~~unsaturated~~, aliphatic or ~~aromatic~~ hydrocarbon radicals having from 1 to 30 carbon atoms, ~~optionally containing from 1 to 5 hydroxy groups, and further optionally substituted with an ether group~~; R^3 is H, or a linear aliphatic hydrocarbon radical having from 1 to 4 carbon atoms; e is an integer having an average value from 1 to 40; ~~wherein R^2 can optionally be alkoxylated, wherein said alkoxy is selected from ethoxy, propoxy, butoxy and mixtures thereof;~~

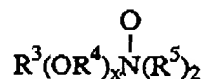
iii) and mixtures of (i) and (ii);

[[~~(d)~~]] ~~(e)~~ optionally, from about 0.1% to about 40% by weight of the composition of a bleaching agent; and

[[~~(e)~~]] ~~(f)~~ adjunct materials;

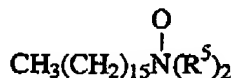
wherein the weight ratio of said low foaming nonionic surfactant to said oxide surfactant is from about 2:1 to about 30:1.

15. (previously presented) The composition according to Claim 14 wherein said oxide surfactant is an amine oxide surfactant having the formula:



wherein R^3 is an alkyl, hydroxyalkyl, or alkyl phenyl group or mixtures thereof containing from about 8 to about 22 carbon atoms; R^4 is an alkylene or hydroxyalkylene group containing from about 2 to about 3 carbon atoms or mixtures thereof; x is from 0 to about 3; and each R^5 is an alkyl or hydroxyalkyl group containing from about 1 to about 3 carbon atoms or a polyethylene oxide group containing from about 1 to about 3 ethylene oxide groups.

16. (previously presented) The composition according to Claim 14 wherein said amine oxide has the formula:



wherein R^5 an alkyl or hydroxyalkyl group containing from about 1 to about 3 carbon atoms or a polyethylene oxide group containing from about 1 to about 3 ethylene oxide groups.

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Claims 17 -- 20 canceled

21. (currently amended) The automatic dishwashing detergent composition according to Claim 14 wherein said low foaming surfactant has less than 5% of dimers and trimers of said nonionic surfactant.

22. (canceled)

23. (currently amended) The automatic dishwashing detergent composition according to Claim 21 wherein said low foaming surfactant has less than 15% of dimers and trimers of said nonionic surfactant.

Claims 24-27 (canceled)

28. (previously presented) The composition according to Claim 14 wherein said low foaming nonionic surfactant is selected from the group consisting of C₉,11PO₃EO₁₃PO₁₅; C₉,11PO₃EO₁₃BO₆; C₉,11PO₃EO₁₃BO₃; C₉,11EO₁₃BO₆; C₉,11EO₁₃BO₃; C₉,11BO₁EO₁₃BO₃; C₉,11EO₈BO₃; C₁₂,15EO₇BO₂; C₉,11EO₈BO₂; C₉,11EO₈BO₁; C₁₂,13EO_{6.5}TBO₁; C₉,11EO₈C(CH₃)₂CH₂CH₃; C₁₁/15EO₁₅PO₆C₁₂/14; C₉,11EO₈(CH₂)₄CH₃; and mixtures thereof.

Claims 29-38 (canceled)

39. (previously presented) The automatic dishwashing detergent composition according to Claim 14 wherein the composition comprises a chlorine bleaching agent.

40. (previously presented) The automatic dishwashing detergent composition according to Claim 14 comprising a bleaching agent selected from sodium perborate, sodium percarbonate, and mixtures thereof.

41. (previously presented) The automatic dishwashing detergent composition according to Claim 14 comprising a bleaching agent selected from hydrogen peroxide, a source of hydrogen peroxide, and mixtures thereof.

42. (previously presented) The automatic dishwashing detergent composition according to Claim 14 comprising said bleaching agent, wherein said bleaching agent is dibenzoyl peroxide.

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43. (previously presented) The automatic dishwashing detergent composition according to Claim 14 comprising said bleaching agent, wherein said bleaching agent is dichloroisocyanurate.
44. (previously presented) The automatic dishwashing detergent composition according to Claim 14 further comprising a bleach activator material selected from the group consisting of tetraacetylenediamine, cationic bleach activators, and mixtures thereof.
45. (previously presented) The automatic dishwashing detergent composition according to Claim 14 further comprising a metal-containing bleach catalyst selected from manganese-containing bleach catalysts, cobalt-containing bleach catalysts, and mixtures thereof.
46. (previously presented) The automatic dishwashing detergent composition according to Claim 45 wherein the cobalt-containing bleach catalyst has the formula:



wherein cobalt is in the +3 oxidation state; n is an integer from 0 to 5; M' represents a monodentate ligand; m is an integer from 0 to 5; B' represents a bidentate ligand; b is an integer from 0 to 2; T' represents a tridentate ligand; t is 0 or 1; Q is a tetradentate ligand; q is 0 or 1; P is a pentadentate ligand; p is 0 or 1; and $n + m + 2b + 3t + 4q + 5p = 6$; Y is one or more appropriately selected counteranions present in a number y, wherein y is an integer from 1 to 3, to obtain a charge-balanced salt; and wherein at least one of the coordination sites attached to the cobalt is labile under automatic dishwashing use conditions and the remaining coordination sites stabilize the cobalt under automatic dishwashing conditions such that the reduction potential for cobalt (III) to cobalt (II) under alkaline conditions is less than about 0.4 volts versus a normal hydrogen electrode.

47. (previously presented) The automatic dishwashing detergent composition according to Claim 46 wherein the bleach catalyst is selected from the group consisting of pentaamineacetatocobalt (III) nitrate, MnTACN, and mixtures thereof.
48. (previously presented) The automatic dishwashing detergent composition according to Claim 14 wherein said builder is a phosphate builder.
49. (previously presented) The automatic dishwashing detergent composition according to Claim 14 further comprising less than about 0.1% of active suds suppressing agent.

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50. (previously presented) The automatic dishwashing detergent composition according to Claim 14 further comprising a deterative enzyme.
51. (previously presented) The automatic dishwashing detergent composition according to Claim 50 wherein said deterative enzyme is selected from the group consisting of proteases, lipases, cellulases, amylases, and mixtures thereof.
52. (canceled)
53. (previously presented) The automatic dishwashing detergent composition according to Claim 14 in the form of granules, tablets, or liquidgels.
54. (canceled)
55. (previously presented) A method of washing tableware in a domestic automatic dishwashing appliance, said method comprising treating the soiled tableware in an automatic dishwasher with an aqueous alkaline bath comprising an automatic dishwashing composition according to Claim 14.